

were, of course, worked up by the author himself, as attested by a series of six preliminary papers published, largely in this journal, between 1937 and 1945. These stand as evidence of the sound original research on which the Flora is based.

The Flora of the Charleston Mountains appeared posthumously under the able editorial guidance of botanists at the University of California, Berkeley, where the Clokey Herbarium, upon which the work so largely rests, is housed. We cannot but regret that the author did not live to experience the pleasure of turning the pages of this handsome volume upon which he worked long and arduously in the face of failing health, and upon the publication of which, as the principal achievement of a lifetime devoted to botany, he placed great store. We can be sure, however, that this work, a significant advance in the documentation of the western flora, will prove an enduring memorial to the labors of a gifted botanist. RUPERT C. BARNEY, Wappingers Falls, New York.

#### NOTES AND NEWS

**JEFFREY PINE IN THE SOUTH COAST RANGES OF CALIFORNIA.** Jeffrey pine has been reported locally in California in the South Coast Ranges as far north as the mountains near San Luis Obispo, in the San Bernardino and San Jacinto mountains and southward into the San Pedro Martir Range in Baja California, Mexico. This species is most common and important in the Sierra Nevada, localized on the western slopes of the range and commonly forming pure stands on the eastern slopes. Jeffrey pine also occurs in the northern Coast Ranges, in Mendocino and Humboldt counties, usually being restricted to serpentine outcrops. Although the presence of this species here is not too well publicized, it has been mapped by members of the Forest Survey (California Forest and Range Experiment Station). Samples obtained by Paul Zinke of the Forest Survey show that Jeffrey pine from the northern Coast Range has characters similar to Jeffrey pine from other areas.

During a recent study of the natural hybrid between *P. Jeffreyi* Grev. and Balf. and *P. Coulteri* Lamb., two small populations of Jeffrey pine, totaling several hundred trees, were found on Chew's Ridge in the northern Santa Lucia Mountains in the Los Padres National Forest, Monterey County, California. These populations are at 5,000 feet elevation, on the ridge top both to the north and southwest of the Chew's Ridge lookout tower. This locality is approximately 100 miles north of the San Luis Obispo County Jeffrey pine occurrence. When the study was undertaken, Jeffrey pine was not known to occur in the Chew's Ridge region; at least, no reference could be found in the literature, and no one with whom the writer

talked was aware of its presence there. It was thought this idea was confirmed when a communication dated May 4, 1951 was received from Mr. A. R. Campbell, District Ranger of the Monterey Division of the Los Padres National Forest, which stated that Jeffrey pine had not been previously reported in this locality. However, a follow-up letter, dated October 23, 1951, stated that he had found an entry in an old diary of March 11, 1910 as follows: "Rode over Jeffrey pine plantation on Chew's Ridge—further instructions for mapping". That is all that could be found, neither maps nor further references to the plantation being located.

On the strength of the above it would seem that Jeffrey pine growing in this area is the result of plantations, and not isolated natural populations as at first suspected. However, without more investigation, neither can be proved. Mr. Campbell states that a very severe fire burned through this region in 1928. Some of the present Jeffrey pine became established about this time, while the majority are somewhat older.

Regardless of its source, the Jeffrey pine growing in this region has an exceptional growth rate and vigor; those trees measured had a mean annual diameter growth of 0.53 inches, a rate considerably in excess of that for other Jeffrey pine populations studied, whose diameter growth averaged less than 0.30 inches a year. The morphologic, anatomic and oleo-resin characters are similar to those of Jeffrey pine from other areas.

In the vicinity of the one Jeffrey pine population, several small trees were studied that had characters similar to the Jeffrey-Coulter pine hybrid. All but one of these were relatively small and their presence could be explained from either the natural or plantation viewpoint of the source of this Jeffrey pine. However, one of the trees with hybrid characters was relatively large, and must have been there before the plantation establishment. Apparently Jeffrey pine is not spreading too successfully here, for the majority of reproduction in the Jeffrey populations has the characters of either Coulter pine or the Jeffrey-Coulter hybrid.

Another interesting area where Jeffrey pine is growing is in the San Carlos Range (San Benito County) east of King City in the region around New Idria. Although known to some botanists and foresters, no reference was found in the literature to Jeffrey pine growing here. The trees from this area have characters similar to other Jeffrey pines, although some variation is found due to the occasional hybridization with Coulter pine and to the presence of extreme site conditions, the area being very dry, with sandy, serpentine, alkaline soil. BRUCE ZOBEL, Texas Forest Service, College Station, Texas.